IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
In re Patent Application of:

Inventor:	OKA, et al
Group Art Unit:	1752
Application No.:	10/602,622
Conf. No.:	2391
Examiner:	Thorl Chea
Filed:	June 25, 2003
Title:	PHOTOTHERMOGRAPHIC MATERIAL

DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
(P.O. Box 1450
Alexandria, VA 22313-1450)

Sir:

I, Seiichi Yamamoto, do declare and state as follows:

I graduated from Tohoku University with a Master's Degree in Chemistry in March 1990;

I joined Fuji Photo Film Co., Ltd. in April 1990, and since that time I have been engaged in research and development in the field of silver halide photosensitive materials for printing, and since March 2000, in the field of silver halide photosensitive materials for medical use

at Ashigara Laboratory (presently, Digital & Photo-Imaging Materials Research Laboratories);

I am a co-inventor of the subject matter disclosed and claimed in the above-identified application; and

I am familiar with the Office Action of June 14, 2005, and understand that the Examiner has rejected Claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Okada et al (US Patent No.5,952,167), Ikari (US Patent No. 6,482,583), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126) and Claims 9 and 13-20 under 35 U.S.C. § 103(a) as being unpatentable over Tto (US Patent No. 6,376,167).

(1) The following additional comparative experiments were carried out by me or under my supervision in order to make the advantages of the subject matter clearer.

(Additional comparative experiments)

Test Samples 1 - 45 were prepared in the same manner as Sample 1 of Example 1 described in Ikari (US Patent No. 6,482,583) except that:

1) the silver halide emulsion of No. 1 of Ikari (a grain size of AgBr is 58 nm) and Nos. 1a, 1b (only the composition of the silver halide was changed from the silver halide

emulsion No. 1 of Ikari) were used;

2) the mercapto hetero-ring compounds I-2 (7.6×10^{-4} mol/molAg) and I-5 (7.6×10^{-4} mol/molAg) of Ikari were used; and

3) the hetero-ring polyhalogen compound Nos. 1, 2, 5 and 6 (1.6 mmol/m^2) of Okada (US Patent No. 5,952,167) were used respectively.

Samples 1-45 were processed and evaluated sensitivity, fogging and printout performance in the same manner as in Example described in Applicants' Specification.

The results obtained are listed in following Table A.

TABLE A

Sample No.	silver halide emulsion	silver halide composition	mercapto hetero-ring compd.	hetero-ring poly-halogen compd.	sensitivity	fogging	Printout performance ΔDmin	Remarks
1	No. 1	AgBr	-	-	100	0.21	0.21	Comparative Example
2	No. 1	AgBr	I-2	-	142	0.16	0.18	Comparative Example
3	No. 1	AgBr	-	No. 1	90	0.16	0.20	Comparative Example
4	No. 1	AgBr	I-2	No. 1	120	0.15	0.14	Comparative Example
5	No. 1	AgBr	-	No. 2	89	0.16	0.15	Comparative Example
6	No. 1	AgBr	I-2	No. 2	125	0.15	0.16	Comparative Example
7	No. 1	AgBr	-	No. 5	88	0.16	0.15	Comparative Example
8	No. 1	AgBr	I-2	No. 5	128	0.15	0.13	Comparative Example
9	No. 1	AgBr	-	No. 6	106	0.16	0.14	Comparative Example
10	No. 1	AgBr	I-2	No. 6	94	0.15	0.13	Comparative Example

11	No. 1	AgBr	I-5	-	138	0.17	0.16	Comparative Example
12	No. 1	AgBr	I-5	No. 1	106	0.15	0.15	Comparative Example
13	No. 1	AgBr	I-5	No. 2	105	0.15	0.15	Comparative Example
14	No. 1	AgBr	I-5	No. 5	104	0.15	0.15	Comparative Example
15	No. 1	AgBr	I-5	No. 6	103	0.15	0.15	Comparative Example
16	No. 1a	AgBr90I10	-	-	98	0.20	0.16	Comparative Example
17	No. 1a	AgBr90I10	I-2	-	140	0.16	0.15	Comparative Example
18	No. 1a	AgBr90I10	-	No. 1	85	0.16	0.14	Comparative Example
19	No. 1a	AgBr90I10	I-2	No. 1	137	0.14	0.08	Present Invention
20	No. 1a	AgBr90I10	-	No. 2	84	0.13	0.14	Comparative Example
21	No. 1a	AgBr90I10	I-2	No. 2	138	0.14	0.07	Present Invention
22	No. 1a	AgBr90I10	-	No. 5	83	0.13	0.13	Comparative Example
23	No. 1a	AgBr90I10	I-2	No. 5	136	0.14	0.08	Present Invention
24	No. 1a	AgBr90I10	-	No. 6	85	0.13	0.13	Comparative Example
25	No. 1a	AgBr90I10	I-2	No. 6	136	0.15	0.07	Present Invention

26	No. 1a	AgBr90I10	I-5	-	138	0.13	0.13	Comparative Example
27	No. 1a	AgBr90I10	I-5	No. 1	135	0.14	0.08	Present Invention
28	No. 1a	AgBr90I10	I-5	No. 2	139	0.14	0.08	Present Invention
29	No. 1a	AgBr90I10	I-5	No. 5	140	0.14	0.08	Present Invention
30	No. 1a	AgBr90I10	I-5	No. 6	137	0.14	0.08	Present Invention
31	No. 1b	AgBr10I90	-	-	95	0.17	0.12	Comparative Example
32	No. 1b	AgBr10I90	I-2	-	141	0.15	0.11	Comparative Example
33	No. 1b	AgBr10I90	-	No. 1	82	0.13	0.11	Comparative Example
34	No. 1b	AgBr10I90	I-2	No. 1	141	0.14	0.06	Present Invention
35	No. 1b	AgBr10I90	-	No. 2	84	0.13	0.11	Comparative Example
36	No. 1b	AgBr10I90	I-2	No. 2	140	0.14	0.06	Present Invention
37	No. 1b	AgBr10I90	-	No. 5	83	0.13	0.11	Comparative Example
38	No. 1b	AgBr10I90	I-2	No. 5	139	0.14	0.07	Present Invention
39	No. 1b	AgBr10I90	-	No. 6	85	0.13	0.11	Comparative Example
40	No. 1b	AgBr10I90	I-2	No. 6	138	0.15	0.07	Present Invention

41	No. 1b	AgBr10I90	I-5	-	140	0.13	0.11	Comparative Example
42	No. 1b	AgBr10I90	I-5	No. 1	141	0.14	0.06	Present Invention
43	No. 1b	AgBr10I90	I-5	No. 2	142	0.14	0.05	Present Invention
44	No. 1b	AgBr10I90	I-5	No. 5	143	0.14	0.06	Present Invention
45	No. 1b	AgBr10I90	I-5	No. 6	142	0.14	0.07	Present Invention

Sensitivity is shown as a relative value taking the sensitivity of Sample No. 1 to be 100.

As seen in Table A above, the combination of the silver halide emulsion, the mercapto hetero-ring compound and the hetero-ring polyhalogen compound of the present invention were unexpectedly superior in fogging and printout performance (ΔDmin) in comparison to the comparative examples, while maintaining high sensitivity.

In the combinations of mercapto hetero-ring compound and hetero-ring polyhalogen compound in the comparative examples, ΔDmin decreases by only 0.01-0.02, and ΔDmin is higher than 0.1. In the combination in the examples of the present invention, ΔDmin decreases by 0.04-0.06, and ΔDmin is lower than 0.1.

(2) Regarding the DECLARATION UNDER 37 C.F.R. §1.132 submitted at January 19, 2005, I further declare that the amounts of the first metal and the second metal used in Experiment B are 5×10^{-4} mol/molAg and 3×10^{-3} mol/molAg, respectively.

I interpret the effect of Dmin, sensitivity and printout of the present invention.

Sensitivity is needed to be 90 % or more of the standard sensitivity, since it relates to process speed.

Dmin is preferred to be 0.20 or less on account of image diagnosis.

In printout, the difference of the film density between an initial time of storage and at the end of storage, ΔDmin, of 0.1 or more makes observation difficult, when images are used for medical applications.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE:

September 13, 2005

Seiichi Yamamoto

Seiichi Yamamoto